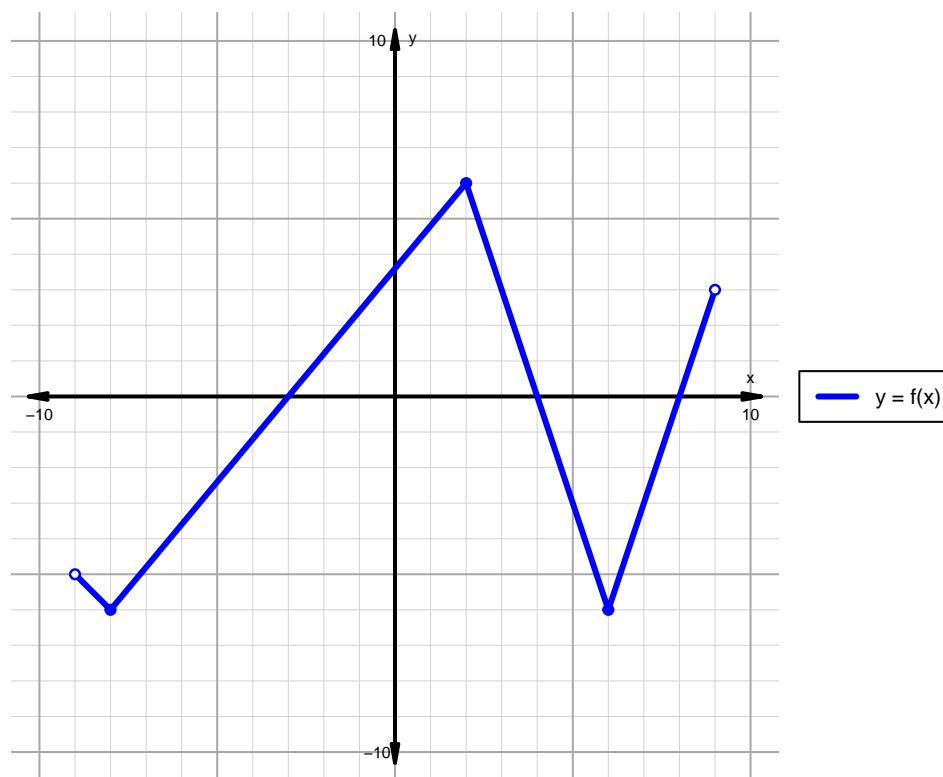


Name: \_\_\_\_\_

Date: \_\_\_\_\_

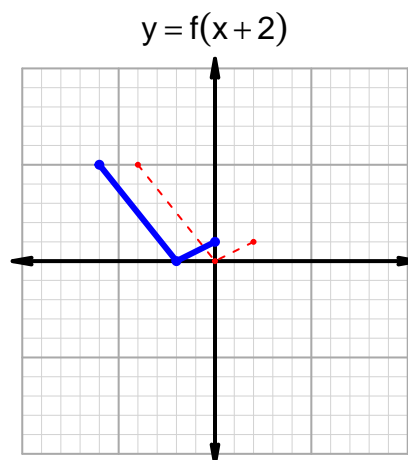
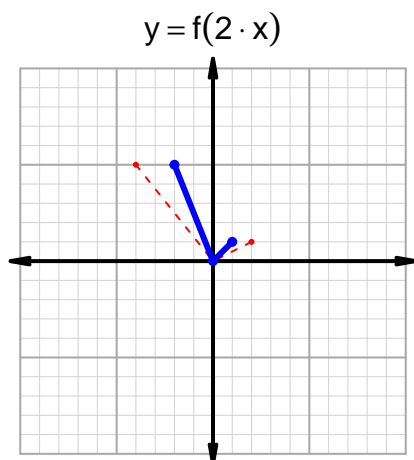
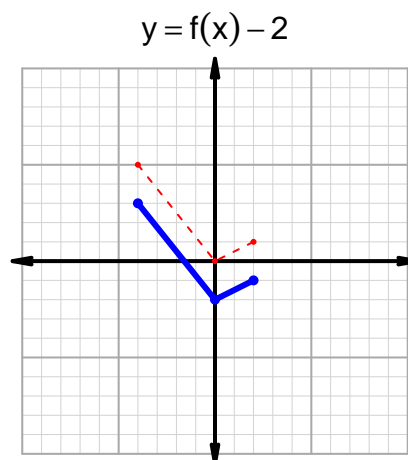
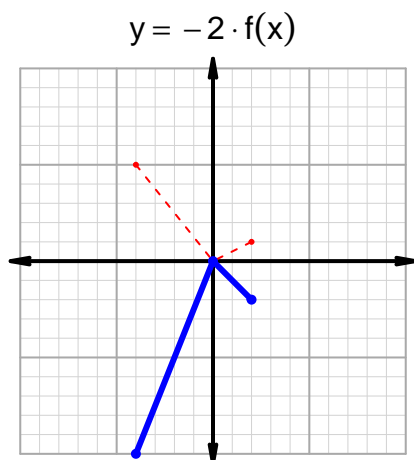
**Intervals, Transformations, and Slope Solution (version 40)**1. The function  $f$  is graphed below.

Indicate the following intervals using interval notation. Remember, you can use  $\cup$  between two intervals to indicate the union. Except for range, all intervals will indicate  $x$  values; this is standard.

Feature	Where
Positive	$(-3, 4) \cup (8, 9)$
Negative	$(-9, -3) \cup (4, 8)$
Increasing	$(-8, 2) \cup (6, 9)$
Decreasing	$(-9, -8) \cup (2, 6)$
Domain	$(-9, 9)$
Range	$(-6, 6)$

## Intervals, Transformations, and Slope Solution (version 40)

2. In the four graphs below,  $y = f(x)$  is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function  $g$  be defined by the table below. Use the formula  $\frac{g(x_2) - g(x_1)}{x_2 - x_1}$  to find the average rate of change between  $x_1 = 46$  and  $x_2 = 56$ . Express your answer as a reduced fraction.

$x$	$g(x)$
9	46
25	56
46	25
56	9

$$\frac{g(56) - g(46)}{56 - 46} = \frac{9 - 25}{56 - 46} = \frac{-16}{10}$$

The greatest common factor of -16 and 10 is 2. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-8}{5}$$